

# 快速膀胱充盈剂的临床研究

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**内容提要** 采用猪苓、茯苓、速尿研制成快速膀胱充盈剂, 用B超观察了211例受试者膀胱尿量及达到最佳充盈时间。结果表明, 在单位时间内, 实验组尿量最多, 充盈时间最短, 为 $30.35 \pm 7.9\text{min}$  ( $\bar{x} \pm S$ , 下同), 西药组为 $63.8 \pm 31.9\text{min}$ , 中药组为 $85.4 \pm 44.3\text{min}$ , 白开水组为 $145.6 \pm 50.1\text{min}$ 。经临床1180例应用证明, 该方剂能显著提高B超探查质量和工作效率, 缩短患者候检时间, 解除老年人及前列腺肥大者的憋尿痛苦, 起效时间短, 持续时间短, 无副作用。

**关键词** 快速膀胱充盈剂 膀胱尿量 最佳充盈时间 B型超声诊断仪

为了寻找快速简便的膀胱充盈方法, 我们采用中西药物结合研制了快速膀胱充盈剂, 在实验观察的基础上, 对1180名受试者进行了临床应用。现将结果报告如下。

## 资料与方法

一、药物配制 猪苓、茯苓各200g, 生药系青岛药材公司供应, 加水1000ml浸泡2h, 文火煎煮至沸后30min, 纱布过滤, 收集滤液; 残渣再加水300ml, 煎煮30min过滤; 合并两次滤液, 水浴下蒸发浓缩至400ml, 每毫升含生药1g, 分装每瓶20ml, 相当含生药各10g。将速尿片研成细末, 每瓶加入1片(20mg), 摇匀备用。

二、实验方法及分组 对211名受试者随机分为3个实验组及3个对照组。(1)中西药合用组(简称实验组)159例, 男94例, 女65例。根据受试者年龄再分为3组: 青壮年组49例, 男27例, 女22例, 年龄20~45岁(平均34.6岁); 老年前期组56例, 男30例, 女26例, 年龄45~60岁(平均54.1岁); 老年组54例, 男37例, 女17例, 年龄60~70岁(平均65.5岁)。(2)单用中药组16例, 男9例, 女7例; 猪苓、茯苓、石韦、泽泻各10g, 水煎1次服。(3)单用西药组16例, 男8例, 女8例; 将速尿研细每次服40mg。(4)白开水对照组20例, 男12例, 女8例; 一次饮白开水350ml。实验均在上午空腹进行。实验前排尿, B超下观察膀胱排空后

开始用药, 受试各组每次进水量均为350ml(包括中药煎剂)。气温 $24 \sim 30^{\circ}\text{C}$ 。

三、B超观察指标 (1)膀胱尿量: 计算方法为: 尿量(ml) = 上下径(cm) × 前后径(cm) × 左右径(cm) × 0.7。(2)膀胱达最佳充盈时间, 即膀胱壁各层、前列腺、子宫附件显示最清晰时间。

## 结 果

一、膀胱尿量达到最佳充盈时间 实验组为 $30.35 \pm 7.9\text{min}$  ( $\bar{x} \pm S$ , 下同), 充盈时间最短者18min, 最长50min; 西药组为 $63.83 \pm 1.9\text{min}$ , 最短为32min, 最长为132min; 中药组为 $85.4 \pm 44.3\text{min}$ , 最短者31min, 最长者140min; 白开水组为 $145.6 \pm 50.1\text{min}$ , 最短者91min, 最长者190min。实验组不同年龄膀胱充盈时间有明显差异: 老年组时间最短者21min, 最长者50min( $33.5 \pm 10.3\text{min}$ ); 青壮年组最短者18min, 最长者42min( $26.7 \pm 5.2\text{min}$ ); 经统计学处理差异非常显著( $P < 0.01$ )。老年前期与老年期比较无明显差异, 与青壮年组比较差异显著( $P < 0.05$ )。

二、膀胱尿量 实验组服药后尿量迅速增加, 在单位时间内实验组与三个对照组比较差异非常显著。以膀胱充盈时间与尿量关系比较, 实验组时间最短, 尿量最多; 白开水组时间最长, 尿量最少; 西药组及中药组居中, 见附表。

附表 各组膀胱充盈时间与尿量比较 (ml,  $\bar{x} \pm S$ )

组 别	膀 胱 充 盈 时 间					
	20min	30min	50min	60min	90min	120min
实 验	283.2±31.8	374.1±104.8	489.5±120.6	672.4±166.5		
西 药	60.9±13.4**	128.2± 31.3**	244.3±112.5*	262.3±116.4*	366.4±128.1	478.3±152.1
中 药	47.8±10.4**	92.4± 16.2**	176.6±74.2**	241.5±102.7*	338.7±116.5	421.5±138.1
白开水	33.7± 9.2**	41.1± 13.6**	68.7±22.6**	120.6±78.7**	261.5±106.4	314.8±124.4

注: 与实验组比较\* $P < 0.01$ , \*\* $P < 0.001$

实验组膀胱尿量与年龄有关, 服药后 30 min B 超检查, 随增龄膀胱尿量减少。老年组为  $336.2 \pm 97.1$  ml ( $\bar{x} \pm S$ , 下同); 老年前期为  $369.2 \pm 110.6$  ml; 青壮年组为  $417.2 \pm 106.2$  ml, 老年组与青壮年组比较差异非常显著 ( $t = 4.03$ ,  $P < 0.001$ )。

三、18 例中、老年人进行实验前后心电图、血压、尿常规、体重、体温、脑血流图及部分心功能、24h 尿钾排出量比较。其中老年冠心病及陈旧性心肌梗塞 6 例, 高血压病 5 例, 健康者 7 名。实验表明, 11 例患者的心电图较服药前有改善, 服药后 4 h 体重减轻 1 ~ 2 kg 者 12 例, 有 4 例脑血流图波幅降低, 其他各项指标与实验前比较无明显差异。

实验组 159 例的排尿量均增加, 有 2 例女性患者(实验组 1 例, 西药组 1 例)排尿后有头昏、恶心、心慌等不适感, 但均在服药后 4 h 内恢复正常。

## 讨 论

一、中药猪苓、茯苓具有利水、渗湿、消肿等作用, 两者结合既有猪苓清下焦之热, 利小便治上冲之功, 又有茯苓逐胃内停水, 利尿镇静之效<sup>(1,2)</sup>。药理实验证明, 猪苓及茯苓利尿时间均在服药后 6 h 内出现<sup>(3)</sup>。为了增加利尿作用, 缩短利尿时间, 我们曾加大用药量并合用利尿中药如石苇、泽泻、车前子等, 经反复试验均未达到理想的膀胱充盈时间和尿量。当猪苓、

茯苓加上少剂量速尿后, 快者 18 min、最慢者 50 min 即可达到满意的 B 超探查尿量。速尿自胃肠吸收 1 h 血清药物浓度达到高峰, 因此本试剂的快速利尿作用显然用一般中西药物药理作用难以解释。这种快速、短暂利尿效果证明, 该方剂不但具有药物协同及相加作用, 还具有强大的增强作用, 其机理有待于进一步探讨。

二、快速膀胱充盈剂能显著地提高 B 超探查质量和工作效率, 缩短了患者候检时间。一般用药后 20 ~ 30 min 内即可进行检查, 不需预先憋尿、饮水作准备; 尤其对老年人及前列腺增大、膀胱括约肌功能差、憋尿困难者解除了痛苦; 解决了夏季气温高不宜憋尿的问题; 方便了大量查体及门诊无足够时间憋尿及急诊患者的检查。每例受检者均可达到 B 超探查所需要的最佳膀胱充盈尿量, 膀胱壁各层清晰, 以膀胱为透声窗的各脏器显示清楚。同时这种快速利尿剂可能对临床某些疾病的治疗拓宽了新的途径和方法。该方剂用量少, 用药简便, 作用时间快, 持续时间短, 对身体无不良影响, 经临床应用效果可靠。

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### The Observation on Efficacy of Danggui Funing Pill(丹归腹宁滴丸) in Treating 162 Cases of Abdominal Pain

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Therapeutic effect of Danggui Funing (DGFN) pill in treating 207 patients with abdominal pain were studied with control. Among 207 patients with abdominal pain, 162 of DGFN pill group and 45 of control groups (35 atropine group and 10 placebo group). The effective rate of abdominal pain in the three groups were 93.27%, 97.14% and 0% respectively. There was no significant difference ( $P > 0.05$ ) between the DGFN pill group and the atropine group, but the difference were statistically significant ( $P < 0.01$ ) between the above-mentioned two groups and the placebo group. These results revealed that the therapeutic effect of DGFN pill was reliable. There were three pharmacological effects of DGFN pill: The blocking on M,  $\alpha$  and  $H_1$  receptors, the analgesic effect and the antiseptic effect. The DGFN pill was the drug of rapid-efficacy and low toxicity.

**Key words** abdominal pain, Danggui Funing Pill

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### Clinical Study of Rapid Bladder Filling Agent

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The Rapid Bladder Filling Agent (RBFA) was prepared with *Polyporus umbellatus*, *Poria cocos* and Furosemidum. The urinary volume and the best filling time of urinary bladder were observed with ultrasonography in 211 cases. The result showed that in experimental group the largest urinary volume in unit time was more than that in control group and shortest filling time was shorter ( $30.35 \pm 7.9$  min) in comparing with control group ( $145.6 \pm 50.1$  min). Clinical observation for 1180 cases proved that the RBFA had the effects of raising the quality of ultrasonographic examination and escalating work efficiency, shortening the waiting time of patients and relieving patients' suffering from excessive filling of urinary bladder. The effective time of the RBFA was fast but the duration was short. The RBFA had no adverse effect.

**Key words** Rapid Bladder Filling Agent, urinary volume of bladder, best filling time, ultrasonography

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### Study on Blood and Urine Prostaglandin $E_2$ and Prostaglandin $F_{2\alpha}$ in Patients with Chronic Gastritis and Peptic Ulcer

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The blood and urine prostaglandine  $E_2$  ( $PGE_2$ ), Prostaglandin  $F_{2\alpha}$  ( $PGF_{2\alpha}$ ) in 106 cases of chronic gastritis and peptic ulcer were investigated by RIA. Meanwhile, the relationship among  $PGE_2$ ,  $PGF_{2\alpha}$  and the Syndromes of TCM were approached. The result showed: In comparing with the normal control, the blood and urine  $PGE_2$  of 106 cases were obviously higher ( $P < 0.01$ ), but  $PGF_{2\alpha}$  was not ( $P > 0.05$ ). The urine  $PGE_2$  and  $PGF_{2\alpha}$  of moderate gastritis were markedly higher than those of mild gastritis ( $P < 0.05$ ), but there were no significant difference between blood  $PGE_2$ ,  $PGF_{2\alpha}$  of moderate gastritis and those of mild gastritis ( $P > 0.05$ ). The blood  $PGE_2$ ,  $PGE_2/PGF_{2\alpha}$  ratio of Dampness-Heat in Spleen-Stomach Syndrome and the blood  $PGE_2/PGF_{2\alpha}$  ratio of incoordination between Liver and Stomach Syndrome were higher than those of Spleen Stomach Deficiency Syndrome in all the cases ( $P < 0.05$ ). Compared with the normal control, both the decreased